Response ID:519 Data

1. BOSC 2017 Nominations

Self Nomination:

Yes

Nominator Information

First Name

Last Name

Nominator Title

Street Address

City

State

Postal Code

Email Address

Phone Number

Mobile Phone

Nominee Information

First Name

Shahid

Last Name

Chaudhry

Nominee Title

Sr. Mechanical Engineer / Water-Energy Nexus Specialist

Street Address

Exemption 6

Mobile Phone

Employment Information

Place of Employment/Work:

California Energy Commisison

Work Street Address

1516 9th Street

Work City

Sacramento

Work State:

California

Work Postal Code

95814

Work Phone Number

916-654-4858

Work Email Address

shahid.chaudhry@energy.ca.gov

Sector

State Government

Qualifications

Primary Area(s) of Expertise

Water Treatment, Water Conservation / Use Efficiency, Water Recycling / Desalination; Water & Energy Sectors Capacity Building, Strategic Planning, Project / Program Planning, Evaluation & Management, Technologies RD&D, Training Needs Assessment, Resource Integration & Management; Emission Reduction, Grant Proposals; Energy Advisor to Water & Sanitation Utilities; Clean Energy, Climate Change (Impacts, Adaptation & Mitigation), Contract Management, Demand Side Electric Load Management, Economic Development,; Energy Auditing, Conservation & Efficiency, Optimization, and Financing; Renewable Energy; Energy Policy; Government; Public Awareness, Communication, Information Dissemination, and Out-reaching; and University Teaching.

Committee Preference(s)

Executive Committee
Safe and Sustainable Water Resources Subcommittee

Statement of Interest

Coming from a well-educated, middle class family; my parents taught me the importance, need, and benefits of volunteering which included not only connecting with like-minded people, having real world experiences, spending quality time away from work and routine life; but most importantly, it gives a sense of returning something good back to the profession and community we are part of and live in. With this strong support and encouragement of my parents, I got involved with my neighborhood social welfare society and eventually was appointed to the senior vice-president position. This was just a humble beginning and then over the years I have an impressive record of involvement in professional and community affairs outside of regular work.

Professionally, with two Master degrees in Environmental Engineering from Canada and Environmental Pollution Control from U.K., my career spans over three decades. In addition to teaching Water & Wastewater Engineering at the university level for nine years; I have 17 years of experience specifically assisting water and wastewater utilities to become energy efficient, cost effective, environmentally friendly, and socially responsible by providing technical assistance and managing grants and loans to implement energy projects. Currently working as Senior Mechanical Engineer / Water-Energy Sustainability Specialist, I am with the California Energy Commission since 1991. An example of assignments completed at the Energy Commission is managing a program which resulted in reducing about 50 MW of electrical load from California's water sector.

Besides working at the Energy Commission, I have a long history of professional and community involvement. I am recently confirmed by the Governing Board of the Florin Resource Conservation District as an Associate Director / Water Sector subject specialist (a voluntary position). Earlier I finished my three years term as Vice-Chair of the Safe and Sustainable Water Resources Subcommittee as well as a

member of the Board of Scientific Counselors' Executive Committee. In this capacity, I reviewed, advised, and provided recommendations to the U.S. EPA's Office of Water on its RD&D Roadmap and Strategic Research Action Plan.
Further, I am member of the Engineering Advisory Board, University of California (Merced); assisting UNHCR in replacing diesel powered generators and diesel powered water pumping systems with sustainable energy systems at refugee camps in Africa; and advising three teams on their efforts to make water systems cost effective and socially responsible.
In the past, in addition to many other volunteer assignments, I served as President of Michener Park – a residential complex of about 400 housing units for the University of Alberta married students; and Member, University Professorships Selection and Undergraduate Teaching Awards Committees, University of Alberta. It is worth mentioning that I also graduated from the City of Sacramento's City Academy.
I was awarded Superior Accomplishment Award twice at the Energy Commission. CA-NV Section of the American Water Works Association recognized my services to the water community with George Elliott Memorial Award; and State of Lagos (Nigeria) awarded me with the State Statue in recognition of my contribution toward state's new initiative on wastewater treatment and disposal.
My interest in this position is a continuation of long history of my outside work involvement in professional organizations which has brought me immense opportunities over the years in terms of exchange of experience and learning from each other, connecting with like-minded people, having real world experiences, spending quality time away from work and routine life, and most importantly, a sense of returning something good back to the profession and community.

Skills/qualifications related to committee preference(s) specified

• M.Sc. Environmental Engineering (Water & Wastewater Treatment), Canada
• M.Sc. Environmental Pollution Control (Air, Land, Noise, and Wastewater Sectors), U.K.
• Senior Engineer / Water-Energy Nexus Specialist (California Energy Commission)
• Demonstrated program development, management, coordination, implementation, and monitoring & verification skills with substantial technical experience in water-energy integration.
• Assisting UNHCR to replace diesel powered water pumping systems with Solar (PV) water pumping systems at refugee camps in Chad and Ethiopia.
• Reviewed and recommended an innovative anaerobic treatment technology for $2 million grant award to demonstrate maximum water and energy recovery from wastewater.
• Seychelles: Developed Business case analysis for installing and operating anaerobic digester & seawater reverse osmosis (SWRO) desalination system at an industrial facility.
• Supervised $500,000 research grant to the University of California, Berkley to investigate biogas production from domestic wastewater using Enhanced Oxidation Ponding System.
• Reviewed and recommended $1.47 million loan funding for a 440 kW in-conduit hydro-electric project.
• Member of the project team who quantified embedded energy in California's water cycle – very first project of its type in the U.S.A.
• As Team Lead, tailored, marketed, managed, and implemented Electricity Demand Reduction Program in California's Water/Wastewater Sector.
• As Member of the Water-Energy Team of California's Climate Action Team, provided technical resources to toward various water, energy, GHG emission mitigation measures to reduce 33% of GHG emission from California's water sector by 2020.
• Reviewed approx. 90 proposals to recommend 50 desalination projects for $50 million grant funding in Feasibility Studies, Research & Development, Pilot Plants Demonstrations, and Construction categories.
• Supervised $2 million RD&D program to develop and refine the electro-technologies for producing cost-effective and sustainable potable and non-potable water using different source waters.
• WRF Project No: 4634; Assessing Public Private Partnership Opportunities for Water and Wastewater Energy Projects.
• WRF Project No: 4625; Opportunities and Barriers for Distributed Energy Resource Development at Water and Wastewater Utilities.
• WRF Project No: 4464; Green Energy Life Cycle Assessment Tool Version 2 (GELCAT 2).
• WRF Project No: 4446; Seawater Desalination Energy Consumption Modeling.

• WRF Project No: 4163; Zero Liquid Discharge Desalination of Waters with High Organic Content.
• WRF Project No: 4080; Seawater Intake Systems for Desalination Plants.
• WRF Project No: 4078; Guidelines for Implementation of Sweater and Brackish Water Desalination Facilities.
• WRF Project No: 4038; Desalination Facility Design and Operation for Maximum Energy Efficiency.
• WRF Project No: 4006; Critical Assessment of Implementing Desalination Technology.
• Project No: 3010; Zero Liquid Discharge for Inland Desalination.
• WateReuse Project No: WRF-06-010D; Consideration for the Co-Siting of Desalination Facilities with Municipal and Industrial Facilities.
• WateReuse Project No: WRF-08-13; Renewable Energy, Peak Power Management, and Optimization of Advanced Treatment Technologies to Reduce Greenhouse Gases at Water Reuse and Desalination and Wastewater Membrane Treatment Plants.
• WateReuse Project No: WRF-08-16; Implications of Future Water Supply Sources on Energy Demand.
• WERF Steering Committee Member - 06-OWSO-1: "Optimization of Wastewater and Solids Operations" to develop and demonstrate economical and environmentally responsible processes that improve wastewater and solids treatment operations efficiencies and costs by 20%.
• WERF Project No: OWSO4R07a; Best Practices for Sustainable Wastewater Treatment: Initial Case Study Incorporating European Experience and Evaluation Tool Concept.
• WERF Project No: OWSO4R07b; Overview of State Energy Reduction Programs and Guidelines for the Wastewater Sector.
• WERF Project No OWSO4R07c; Carbon, Heat and Energy Analysis Plant Evaluation Tool (CHEA PET) Optimization.
• WERF Project No OWSO4R07e; Energy Efficiency in Wastewater Treatment in North America.

Other Relevant Information

CV/Resume URL

2. CV/Resume

Please upload your CV/ Resume.

CV_Shahid_Chaudhry.pdf

3.

BOSC Nomination

Jun 24, 2017 23:01:39 Success: Email Sent to: tracy.tom@epa.gov

4. Thank You for your Submission!

Curriculum Vitae

Name	Shahid Chaudhry Exemption 6 [redacted]
Nationality	U.S.A.
Qualifications	• M.Sc. Environmental Engineering (Water Supply and Wastewater Disposal), University of Alberta, Edmonton, Canada • M.Sc. Environmental Pollution Control (Air, Wastewater, Noise, and Solid Waste Mgmt.), Leeds University, Leeds, U.K. • B.Sc. Chemical Engineering, Engineering University, Lahore, Pakistan
Working and/or Consulting Experience	U.S.A., Pakistan, Brazil, Kenya, Chad, Ethiopia, Nigeria, the Netherlands, Spain, South Africa, Seychelles, Mauritius, Sierra Leone, and Peru
Present Position	Senior Mechanical Engineer, California Energy Commission, Sacramento, U.S.A.
Speciality	Sustainable Management of Energy and Water Resources
Languages	English, Urdu, Punjabi, Hindi

1. Statement of Motivation

   Coming from a well-educated, middle class family; my parents taught me the importance, need, and benefits of volunteering which included not only connecting with like-minded people, having real world experiences, spending quality time away from work and routine life; but most importantly, it gives a sense of returning something good back to the profession and community we are part of and live in. With this strong support and encouragement of my parents, I got involved with my neighborhood social welfare society and eventually was appointed to the senior vice-president position. This was just a humble beginning and then over the years I have an impressive record of involvement in professional and community affairs outside of regular work.

2. International Advisory, Consulting, Volunteering, and Pro-Bono Experience[1]

   a. Kenya: Assessed energy needs and completed Pre-Feasibility Study for Design of an Infrastructure Management Contract in a refugee camp setting.

      Reviewed and provided comments on UNHCR's Global Strategy for Safe Access to Fuel and Energy (SAFE) as well as SAFE strategy specifically for Kenya.

   b. Chad & Ethiopia: Assisting UNHCR in replacing diesel powered generator with battery backed-up stand-alone PV electricity generation systems and in replacing

[1] Assignments completed while on leave or before joining state service.

diesel powered water pumping systems with Solar (PV) water pumping systems at refugee camps.

c. Sierra Leone: Developed an MS Excel based financial model to estimate Levelized Cost of Electricity (LCOE) to compare financially viability of proposed PPA tariffs for PV projects vs conventional sources.
d. As Deputy Chief of Party on a USAID $23 million Energy Efficiency and Capacity Project in Pakistan; substituted for COP in designing and implementing performance monitoring approaches with definitive targets, indicators and strategies to track, measure, document, and report progress on the project.
e. As Senior Energy Sector Specialist identified, evaluated and recommended Four EE/RE projects in Pakistan's industrial sector for USTDA funding consideration. The recommended projects will help promoting U.S. private sector objectives as well as the development of sustainable energy infrastructure in Pakistan.
f. Developed Business case analysis for installing and operating anaerobic digester & seawater reverse osmosis (SWRO) desalination system at an industrial facility, Seychelles.
g. Identified and prioritized water and energy issues for the Republics of Seychelles and Mauritius.
h. Evaluated potential of using small scale emerging membrane distillation (MD) technology in the Netherlands for island nations seriously lacking water and energy resources. Also visited and reviewed the performance of the pilot scale SW MD system at the Plataforma Solar de Almería (PSA), Spain – the largest concentrating solar technology R&D and test center in Europe.
i. Provided sustainable water supply and wastewater disposal solutions to a new upscale residential subdivision in Brazil.
j. Educated and shared U.S. experience on Energy Management in Wastewater Treatment with the Lagos (Nigeria) State officials at the inaugural summit of the new initiative on Wastewater Management in Lagos State - Chartering a New Course. Further, visited many wastewater treatment facilities to identifying and recommending energy efficiency measures.
k. Reviewed small scale water recycling applications in Lima (Peru) and advised measures in improving their performance.
l. Attended, educated and shared the U.S. experience on inextricable link between Water & Energy at the Mayoral Climate Change Summit in Johannesburg (South Africa).
m. Identified, evaluated, and recommended wastewater treatment and water recycling options for the City of Karachi (Pakistan).
n. Assisted World Bank in identifying and reviewing business models and energy management practices in municipal water and wastewater utilities; and
o. Completed filed projects for UNDP and UNEP on Ground Water Quality Monitoring and Air Pollution Monitoring, respectively.

3. Employment Record

10/2014 - to date Senior Mechanical Engineer, California Energy Commission, Sacramento, California (U.S.A.)	• Strategic energy planning and program development; providing technical assistance and supervising energy projects feasibility studies; reviewing and approving funding requests for energy projects; energy efficiency and renewable energy projects management; capacity building, knowledge transfer, and outreaching and programs marketing. • Managing / managed multi-million dollar grants and loans to public sector entities (schools, colleges, cities, counties, hospitals, water and wastewater facilities, etc.) across California implementing energy projects.
04/2014 - 04/2017 Special Government Employee, U.S. Environmental Protection Agency; Office of Research & Development (Home based)	• As Vice Chair of the Safe and Sustainable Water Resources (SSWR) Subcommittee reviewed and advised on 2016-2019 RD&D Roadmap and Strategic Research Action Plan in the water and wastewater sector. • As Member of the Board of Scientific Counsellors' (BOSC) Executive Committee advised and provided recommendations on technical and management issues on research programs.
09/1998 – 12/2002 Absentee Business Owner (Davis & Woodland)	Owned, operated, and managed two gasoline retail operations with auto-repair and convenience stores. In this capacity: • Hired, trained, and supervised staff. • Monitored, supervised, and directed business operations in consultation with managers and supervisors. • Coached and monitored staff in performing their duties e.g. ordering supplies, operating cash registers, punching and maintaining time cards, preparing payroll, performing accounting work, providing customer service, taking phone calls, and other everyday tasks necessary for the efficient running and smooth operation of all three profit centers at each location. • Identified, negotiated, contracted, and ensured quality services and supplies from oil companies, auto parts suppliers, vendors.
05/1991 - 09/2014 Associate Mechanical Engineer / Elec. Generating	• Managed energy efficiency and renewable energy technologies R&D grants and implemented energy projects; monitored contracts and projects progress,

System Specialist / Assoc. Energy Spec., California Energy Commission, Sacramento, California (U.S.A.)	estimated and verified market penetration potential of developed technologies, and quantified energy and environmental benefits of new technologies. • Modeled environmental impacts of power plants emissions and their economic impacts on various receptors,
01/1977 - 12/1985 Assistant Professor / Scientific Officer, University of Engineering & Technology, Lahore, Pakistan	• Taught Unit Operations and Unit Processes in Water and Wastewater Treatment to the undergraduate students. • Represented department at various meetings with administration, faculty, vendors, external agencies, professional organizations, and Academic Council and University Senate meetings. • Hired, trained, and supervised a group of 10 employees comprising of laboratory supervisors, technicians, and administrative staff. • Supervised procurement of laboratory chemicals, equipment, and other supplies through bidding process, and set up an inventory control system. • Implemented field projects for UNDP & UNEP.

4. Volunteering Experience in Professional / Community Arenas

Manuscripts Reviewed for Referenced Journals

- Dynamic modeling of water demand and adaptation strategies for power stations to global change (Manuscript ID: ECOLEC-D-08-00181); Ecological Economics.
- Energy and Air Emissions Effects of Water Supply (Manuscript ID: es-2008-01802h); Environmental Science & Technology.
- Energy and Water Quality Management Systems for Water Utility's Operational Cost Reduction: A Review (Manuscript ID: 2013WR015146); Water Resources Research.

Currently

- Associate Director, Florin Resource Conservation District, Elk Grove, California
- Member, Engineering Advisory Board, University of California, Merced
- Member, Board of Directors, Pakistan Solar Institute
- Member, Board of Directors and Energy Specialist, Pakistan Straw Bale and Appropriate Building, and
- Member, Three Project Advisory Committees for various energy projects in the water and wastewater sector for Water Research Foundation.

Formerly

- Director, Affordable Desalination Collaboration.

- Chair, Energy & Desalination Committees of the CA-NV Section of the American Water Works Association.
- Instructor, Energy Management in Water and Wastewater Systems, Dept. of Engineering Professional Development, University of Wisconsin, Madison, Wisconsin.
- Member, 12 PACs for various energy projects in the water and wastewater sector for Water Research Foundation, Water Environment Research Foundation, and Water Reuse Association.
- Member: Planning Committee for the Multi-State Collation's Annual Conferences.
- Coordinator: Four One-Day Workshops on the Design & Operations Considerations for Seawater Reverse Osmosis Desalination Facilities (2010, 2015).
- Advised American Society of Mechanical Engineers on Industrial Wastewater Demineralization / Desalination and Hydraulic Fracking WW Treatment Initiatives.
- Member: Technical Working Group on Energy and Environment for the City of Santa Cruz's 9,500 m3/day (2.5 MGD) SWRO Desalination Project.
- Provided technical guidance to the Consortium for Energy Efficiency (CEE) and American Council for an Energy Efficient Economy (ACEEE) in developing Water & Wastewater – Energy Initiative and Development of an Energy Roadmap in the Water and Wastewater Industry, respectively.
- Member: Working Group to Direct the Development of Water Supply Solutions Roadmap (Sandia National Laboratories) and Implementation of the National Desalination and Water Purification Technology Roadmap.
- Member: Advisory Panel of the U.S. Bureau of Reclamation's Salton Sea Vertical Tube Evaporator (VTE) Pilot Test Project, and Proposals evaluation panel for internal RD&D funding for desalination projects for 2012 & 2013 fiscal years.
- Member: Proposals evaluation and funding allocation committees for the California Department of Water Resources to award $50 million for desalination projects in four categories (feasibility studies, R&D, pilot projects, & construction);
- President: Michener Park – a residential complex consisting of about 400 housing units for University of Alberta married students.
- Member: Board of Directors; and Director of Administration, Pakistani Community Association, Sacramento.
- Member: University Professorships Selection Committee, University of Alberta, Canada.
- Member: Undergraduate Teaching Awards Committee, University of Alberta, Canada.
- Member: University Senate, University of Engineering & Technology, Pakistan.
- Member: Academic Council, University of Engineering & Technology, Pakistan.